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WHAT'S IN A TITLE?

Given the space limitation of NSERC's application forms... not a great deal. Titles of research projects tend to be written as a convenient reference for other researchers, and generally offer the public little in the way of explanation or justification for the research. Furthermore, titles are often taken out of context, and in the worst case are used to criticize or even ridicule the research. Jargon and witty titles seem to be particularly vulnerable. One of the best-known examples is the "Golden Fleece Award" announced by former US Senator William Proxmire for many years. Proxmire used to quote titles of research projects that caught his eye, and ridicule them as examples of the kind of work that researchers were doing to "fleece" the taxpayers. We are encountering the same thing in Canada today, from the occasional politician and media columnist, and in letters to the minister.

This is very unfortunate and could be very harmful to the entire

research community, because now more than ever the research enterprise needs public support. We have to convince the public that when NSERC supports research projects it is making strategic investments in Canada's capabilities in S&T.

There is, however, a way to minimize this kind of damaging misinterpretation and misrepresentation, and it is for this reason that researchers applying this year will note a significant change on NSERC Form 101. We are not asking that people write titles any differently. After all, it is not reasonable to try to explain and justify a research project in its title. We are asking that researchers provide a public summary in plain language, which would explain and justify their research in language that their teenage children or parents would understand. Adding the new public summary field has not increased the length of the form, as we have eliminated the old summary field, but it will cause some good things to happen.

First, the researcher will be making a good start on communicating with the public -- something that is essential at a time when public funds are in very short supply, and public support for investments in research is essential.

Second, we will have material at our fingertips which we could use immediately to answer destructive criticism based on the title alone, and maybe even head off the criticism by providing quick and understandable answers when questions are first raised.

Third, we will have a database from which we can develop communications for building public support for research sponsored by NSERC.

Over time, we can also develop mechanisms to include the paragraph in every report and release that refers to new awards -- longer reports and listings on the Web would be a fair price to pay.

So my message to the NSERC applicant is: When you come to this new section, please remember why it is there, choose your words carefully, and if you are really uncertain about their impact, ask a non-scientist friend for a second opinion.

Tom Brzustowski

UNIVERSITY-INDUSTRY SYNERGY -- YOU'RE INVITED!

What is it?

The 2nd Annual Symposium on University-Industry Research and Development Collaboration, a two-day symposium organized by NSERC and The Conference Board of Canada to find new ways of fostering closer ties between university and industry researchers.

When and where will it be held?

Tuesday, October 29 and Wednesday, October 30, 1996, at the Queen Elizabeth Hotel in Montreal.

Why should you attend?

It's your chance to learn, to speak your mind and to contribute to an understanding of what's at stake and how best to build the kinds of relationships that add tangible benefits to industry and university partners. You'll meet other senior decision-makers from small, medium-sized and large organizations, universities, governments and other communities. You'll be informed and inspired by a roster of experts. You'll attend an award ceremony and meet the winners of the R&D Partnerships Awards for best practices in university-industry R&D partnerships.

What topics will be covered?

Competitiveness and the use and development of knowledge; the current state of industry and university R&D in Canada; best practices in technological collaboration; collaborative initiatives for financing high technology; what works and what doesn't for defining intellectual property are but a few of the many topics to be discussed.

How can I obtain the symposium brochure?

Contact:

The Conference Board of Canada
255 Smyth Road
Ottawa, Ontario K1H 8M7
Phone: 1-800-267-0666
Fax: (613) 521-0661

FIVE NEW COUNCIL MEMBERS APPOINTED

Industry Minister John Manley recently announced that Drs. Suzanne Fortier, Pierre Lacroix, Lorne Babiuk, Norman Dovichi and Douglas Barber have been appointed to NSERC. Mrs. Michèle Thibodeau-DeGuire, President and Executive Director of Centraide of Greater Montreal (United Way), has been reappointed. All of the terms are three years in duration.

Dr. Suzanne Fortier is a professor of chemistry and of computing and information science and Vice-Principal of Research at Queen's University. She holds a bachelor's degree and a doctorate in crystallography from McGill University. Dr. Fortier has served on many committees and boards, and she is currently Vice-Chair of the Ontario Council of University Researchers and a member of the Canadian Society for Chemistry and of the Canadian Society for Computational Studies of Intelligence.

Dr. Pierre Lacroix is Senior Vice-President of Environment and

Health and Chairman of the Board of the Roche Ltd., Consulting Group. He holds a doctorate in environmental engineering from Purdue University and has worked in a variety of institutions, both public and private, including the Institut national de la recherche scientifique, Laval University, the University of Ottawa, Environment Canada, and Sani-Gestion Inc. Dr. Lacroix has published extensively, and has broad experience as a professor, researcher president, manager, and technical consultant.

Dr. Lorne Babiuk is Director of the Veterinary Infectious Disease Organization in Saskatoon. He holds degrees in soil science, soil microbiology, virology and veterinary micro-biology. Dr. Babiuk has been instrumental in transferring technology from the research laboratory to industry. In recognition of this he was awarded the Xerox Canada Forum Award in 1993.

Dr. Norman Dovichi is a professor of chemistry at the University of Alberta. He holds bachelor's degrees in chemistry and mathematics from the University of Northern Illinois and a doctorate in analytical and physical chemistry from the University of Utah. A faculty member of the University of Alberta for ten years, Dr. Dovichi continues to make outstanding research contributions to the field of microchemical analysis. He was awarded one of NSERC's prestigious E.W.R. Steacie Memorial Fellowships in 1992.

Dr. Douglas Barber is the President and Chief Executive Officer of Gennum Corporation. He holds degrees in electrical engineering from the University of Saskatchewan and the Imperial College (London). Dr. Barber has extensive experience in the private sector, having worked previously with Westinghouse Canada and Linear Technology Inc. He has taught engineering physics as a part-time professor at McMaster University and is now a member of the university's Board of Governors.

Women in Science and Engineering: TASK FORCE REPORT RELEASED

At its June meeting, Council enthusiastically received the report of the Task Force on Women in Science and Engineering and agreed to make it widely available to the community at large. The report has been distributed to universities and to NSERC committees, and is available on NSERC's Web site. Copies are also available upon request.

A number of the recommendations contained in the report were brought forward for decision at the June meeting. Specifically, Council adopted a policy statement.

"NSERC believes that women should have every opportunity to participate fully in science and engineering and strongly encourages women to consider entering careers in these fields.

The Council's programs and peer review system are designed and

operated to ensure fair treatment of all applicants regardless of gender.

NSERC recognizes that barriers still exist to the full participation of women in science and engineering careers. It is committed to identifying and working to eliminate any barriers that may exist within its own programs and processes and encourages others to do the same.

In addition, NSERC endorses the use of special initiatives when appropriate to encourage and assist women in reaching full participation in all disciplines."

In addition, Council approved revisions to the principles governing membership of NSERC standing and selection committees, requiring that gender balance be considered when making appointments, with a minimum of two women on each committee, and that young researchers be considered as potential candidates for membership on selection committees (they are already considered for standing committees).

With respect to the NSERC Postdoctoral Fellowships program, Council accepted the recommendation of the Task Force that fellows (women and men) who wish to remain at the university from which they received their doctoral degree be permitted to hold their award for two years rather than be restricted to only one year as per the current policy. Solid justification must still accompany a request to remain at the same university. The program literature will be revised to encourage individuals in such a situation to consider changing universities (if two exist in the same city) or departments and/or supervisors in an effort to diversify experience.

Council reviewed the possibility of targeting some of the undergraduate student research awards to women as had been done in the past. However, given that the USRA program has recently been refocused and is only open to small institutions, Council decided that it was premature to impose additional conditions on the program for the moment. Universities participating in the USRA program for small universities will be encouraged to direct at least 50% of their USRA awards to female students when possible. The need for special scholarships at the undergraduate level will be reexamined once NSERC has had experience with the hiring of women under the new USRA program.

Finally, Council agreed to introduce four additional Chairs for Women in Science and Engineering. The purpose of these chairs is to develop strategies and programs to increase the participation of women in science and engineering. The chairs would be jointly funded by NSERC and the private sector. The program will be developed by staff over the coming months and a single competition will be held in late 1996. Chairholders would be appointed for a five-year period, which would be renewable once for a further five years.

A number of other recommendations had already been implemented by NSERC. These are outlined in the status report available on the NSERC Web site or upon request.

Research Grants: SUPPORTING COLLABORATION AND INTERDISCIPLINARY RESEARCH

Increasingly, research requires expertise, methodologies, equipment and resources that go beyond the knowledge and means of one researcher. Collaboration enables researchers to obtain significant results on research questions that are beyond their individual resources or the concerns of individual disciplines. NSERC is responding to these new challenges: last fall, Council approved a number of program changes to encourage and support collaborative and interdisciplinary research within a simplified program structure.

NSERC's project-oriented programs were regrouped within a single "Research Partnerships Program" (RPP). The redesigned program provides a more flexible approach to fostering interactions and partnerships between university researchers and other sectors, and transferring to Canadian-based organizations the knowledge generated and the expertise developed.

NSERC is now introducing a number of changes to the Research Grants Program to facilitate, where appropriate, the support of collaboration and interdisciplinary research.

Changes to the Program Description

Researchers have always been able to use their Research Grant to support their collaborative and interdisciplinary research activities. While many have, there remains a perception in the community that this program focuses on individual research efforts and contributions. To address this, NSERC has revised the program description to highlight the role of collaboration and interdisciplinarity as means to greater achievement in research, where appropriate.

Although the selection criteria remain unchanged, their description has been expanded to take into account the benefits of collaboration where the research questions to be addressed require knowledge, expertise and resources that go beyond those of the applicant. For example, when assessing the excellence of the applicant(s), the complementarity of expertise and synergy between collaborators and the overall significance of contributions achieved through collaboration will be considered. Similarly, a collaborative environment will often enhance and broaden a student's experience, thus adding to the significance of applicants' contributions to the training of highly qualified personnel.

Removal of the Distinction Between Individual and Team Grants

There will no longer be a distinction between individual and team grants. This change will remove the misconception that only individual research activities are carried out at present under individual Research Grants.

Researchers who apply individually will be encouraged to describe

their collaborative research activities in their proposal. Researchers who work together in a long-range collaborative program will be encouraged to apply as a group. Researchers will still be able to hold only one Research Grant at any given time. However, to encourage researchers to apply as a group, Grant Selection Committees (GSCs) will have to justify to NSERC any reduction in the total funding to be awarded to a group below the sum of the individual grants held previously by the members of the group. Also, all contributors (applicant and co-applicants) will be considered on the same footing when the excellence of the group is assessed; the applicant is simply the researcher identified as responsible for administering the award.

Review of Interdisciplinary Applications

As part of Form 180 (Notification of Intent to Apply for a Research Grant), researchers will be asked to indicate whether their research is interdisciplinary. This information will be used to ensure an appropriate review of all aspects of the application. If the application is reviewed by a discipline GSC, input from other disciplines will be gathered, as needed, through an appropriate selection of external referees or through consultation with other discipline GSCs. If necessary, additional interdisciplinary or multidisciplinary committees will be created.

Other Changes

Other changes will be made to ensure that all grant selection committees are receptive to collaborative proposals and do not inappropriately apply measures of individual achievement to the assessment of these proposals.

Through the appointment of members who are themselves experienced in collaborative research activities, orientation sessions for new members of Grant Selection Committees, guidelines to committees and advice during the adjudication meetings, NSERC will ensure that the peer review of applications for Research Grants fully values collaboration and interdisciplinarity in research.

In taking steps to encourage collaboration across all programs, Council noted that the university promotion and tenure process does not always include sufficient rewards for collaboration and recognized the need for staff to work closely with the research community to ensure that practices both in the peer review process and in the universities promote the emergence of excellent collaborative proposals in areas where this will lead to greater achievements in research.

1996 COMPETITION RESULTS -- RESEARCH GRANTS PROGRAMS

NSERC's Grants Selection Committees met in February and reviewed 4,500 applications for Research, Equipment and Major

Facilities Access (MFA) Grants. In the Research Grants program, 77% of applicants were funded, up from 68% last year. The value of the Equipment Grants awarded was 27% of the total amount requested. In addition, 44 Major Facilities Access (MFA) Grants were awarded.

The accompanying tables summarize commitments resulting from the 1996 competition (including instalments of grants awarded in previous competitions). Decisions on a number of Research and Equipment Grant requests are still pending. Once they are resolved, some of the figures presented in Table 1 will increase, so those requiring up-to-date figures should contact the Research Grants and Scholarships Directorate.

Table 1: Grants Awarded in the 1996 Competition, including instalments (in $000)

Grants Selection Committe	Research Grants(1)		Equip. Grants(2)		MFA Grants (3)		Total Funding	
	N	$	N	$	N	$	N	$
Animal Biology	235	5,899	19	530			254	6,429
Animal Physiology	200	6,627	15	428			215	7,055
Cell Biology and Genetics (02) (4)	1	51					1	715
Cell Biology	265	8,589	23	664			288	8,786
Molecular and Developmental Genetics	171	6,644	11	197			182	6,841
Plant Biology and Food Science	305	9,728	39	1,002			344	10,730
Evolution and Ecology	451	12,573	28	596			479	13,170
Psychology	346	8,966	24	394			370	9,360
Solid Earth Sciences	299	8,880	17	708			316	9,588
Environmental Earth Sciences	333	7,998	30	1,177			363	9,175
Inorganic and Organic Chemistry	270	11,421	31	2,490			301	13,911
Analytical and Physical Chemistry	299	10,767	27	2,252			326	13,019
Space and Astronomy	155	4,842	13	247	2	125	170	5,214
Condensed Matter Physics	215	6,489	25	1,156			240	7,645

General Physics	129	3,870	13	620			142	4,490
Pure and Applied Mathematics (16) (4)	4	92					4	92
Pure and Applied Mathematics A	299	4,273	2	77			301	4,350
Pure and Applied Mathematics B	223	3,167	7	167			230	3,334
Statistical Sciences	242	3,128	12	229			254	3,357
Computing and Information Science	502	11,342	21	719	11	668	534	12,728
Communications, Computers and Components Engineering	300	6,819	11	454			311	7,273
Electromagnetics and Electrical Systems Engineering	255	6,261	17	602			272	6,863
Industrial Engineering	223	4,484	11	273	2	100	236	4,858
Chemical and Metallurgical Engineering	424	12,154	32	1,891			456	14,045
Civil Engineering	504	11,201	30	875			534	12,076
Mechanical Engineering	485	11,077	30	1,180			515	12,257
Interdisciplinary	39	940	2	57	50	3,690	91	4,686
Selection Committee on Research Grants	9	4,969	1	30			10	4,999
Committee in Life Sciences	7	867					7	867
Total (excluding Subatomic Physics)	**7,174**	**188,283**	**506**	**24,820**	**66**	**4,612**	**7,746**	**217,912**
Subatomic Physics	160	11,501	10	482	13	5,009	183	16,992

1 Includes individual, team, and project grants and grants to holders of Women's Faculty Awards.

2 Includes Equipment, Major Equioment, and Major Installations Grants; some equipment grants were paid with 1995 funds.

3 Includes phase-out of Infrastructure Grants.

4 Instalments only.

Table 2: MFA Competition Results

Type of Facility/Area	Awards No.	Awards $000
Marine Sciences	4	603
Field Stations	7	321
Cultures and Collections	3	91
Other Life Science Facilities	1	25
Chemistry	4	156
Earth Sciences	7	346
Materials Science and Physics	11	1,189
Space and Astronomy	3	261
Engineering	2	210
Mathematics, Statistics and Computing	2	235
Total	44	3,437

ASSESSING THE EXCELLENCE OF APPLICANTS AND THEIR CONTRIBUTIONS TO RESEARCH AND TRAINING

One evaluation criterion common to all NSERC grant programs is the "excellence" of applicants. Its proper assessment is key to NSERC's goal of supporting high quality research in the natural sciences and engineering. Although the evaluation encompasses assessment of the quality and impact of the applicant's contributions, knowledge, demonstrated expertise and experience, and stature in the field, many researchers perceive that selection committees primarily focus on counting publications. A significant number of those appealing funding decisions cite comparative data on the number of publications and citations as evidence of unfair treatment.

NSERC's "Policy and Guidelines on Publications and Productivity," published annually in the Researcher's Guide, acknowledges that in

many disciplines the publication of articles in refereed journals is the most common means of validating and disseminating research results. However, the Guide also highlights the validity of other forms of publication and dissemination and emphasizes quality over quantity. The significance of a research contribution and its use by other researchers and end-users, as well as its influence on the direction of thought and activity in the target community, are the ultimate tests of its quality.

Increasingly, grant selection committees and panels are using a wider variety of factors to evaluate the significance and impact of an applicant's recent work. To support this approach and to remind applicants to focus in their application on the quality and impact of their recent contributions to research, NSERC is modifying its program and application literature as follows.

Changes to the Researcher's Guide and Forms

The "Policy and Guidelines on Publications and Productivity," Appendix 5 in the Researcher's Guide, has been renamed "Policy and Guidelines on the Assessment of Contributions to Research and Training." The new wording emphasizes even further that the assessment of the excellence of researchers rests on the quality and significance of their research contributions rather than on the number of publications and the choice of journal. A new section of the policy relates to contributions to training (see the accompanying article on this subject).

Related changes have been made to the Personal Data Form (Form 100). In the first section, applicants are asked to describe their five most significant contributions to research in the last six years. The contributions chosen need not be limited to publications in refereed journals and could include other forms of publications and contributions such as conference proceedings, review articles, reports documenting contributions to industrial research or engineering practice, patents, presentations at conferences and symposia, and technology transfer activities. Applicants should describe how the contributions chosen have influenced the field and the activities of users. If the contributions chosen are from collaborative work, applicants should document the significance of the collective activity and their own contribution to it.

In the second section of the form, applicants are asked to list other research contributions in the last six years and to provide details, such as the nature of collaborative activities, the reason for selecting certain journals for publications, the impact or potential impact of patents, technology transfers, etc. This list is not meant to be exhaustive, however together with information on contributions to the training of highly qualified personnel (see accompanying article), other evidence of impact and contributions, and an explanation of any delays in research activity, the list should give peer reviewers a good overview of the scope of the applicant's activities and achievements. As the form's five-page limitation will remain, applicants will have to make judicious choices to include the information that will best demonstrate their excellence.

It should also be noted that the current "Guidelines for the Review of Applications in Engineering and the Applied Sciences" remain in effect.

CLARIFYING THE "TRAINING OF HIGHLY QUALIFIED PERSONNEL" CRITERION

Since 1991, applicants for NSERC grants have been assessed on their contributions to the training of highly qualified personnel. Recently, some researchers have asked why NSERC established this as a criterion in the first place; some felt that they should not take on students if employment prospects in their research areas were poor. We therefore decided it was time to explain more clearly what NSERC means by "training."

To NSERC, the definition is very broad. Most researchers know that we consider the training of graduate students and postdoctoral fellows to be important. However, the supervision of undergraduate summer projects and honours theses is also an important contribution to training, as is working with technicians and other research personnel. Exposing undergraduates to research is very effective in encouraging them to pursue further studies and a career in science or engineering; technicians and other research personnel also benefit greatly from exposure to new ideas and techniques in the laboratory.

NSERC also takes a broad view of the purpose of supporting training. The benefits of advanced training in science and engineering are not limited to those who pursue an academic career; people with such qualifications go on to a wide variety of careers. For example, they can be entrepreneurs, industrial researchers, government scientists and decision-makers, and teachers in secondary and elementary schools. NSERC believes that all these are valid career paths for students trained by NSERC grantees, and that society and the national economy benefit from the training undertaken in university laboratories.

In order to ensure that NSERC's position on training is clear to both applicants and the members of selection committees, NSERC is modifying its program and application literature as follows.

Changes to the Researcher's Guide and Forms

A new Appendix, entitled "Policy and Guidelines on the Assessment of Contributions to Research and Training," will be included in the 1996 Researcher's Guide. The document emphasizes three important points:

In the assessment of the excellence of a researcher, the emphasis is on the quality and impact of his or her contributions rather than the quantity (see previous article);

NSERC's definition of highly qualified personnel includes summer

undergraduate students, undergraduate honours thesis students, graduate students, postdoctoral fellows, technicians, and other research personnel;

NSERC expects that trainees supported from a grant will produce theses and other high quality contributions to knowledge, and will move on to careers in science and engineering. As professionals in academia, industry or the public sector, they will be producers and/or users of knowledge.

The Appendix also includes a list of specific issues for applicants to address in their Personal Data Form (100) and Application for a Grant (Form 101).

In addition, changes will be made to the application forms and instructions to ensure that the most appropriate information on contributions to training is being obtained. Information on highly qualified personnel will now be presented in a way similar to information on research contributions.

Evaluation guidelines provided to the Research Grants Program's selection committees and Research Partnerships Program's selection panels on the assessment of contributions to training will reinforce the information included in the new Appendix. Therefore, both applicants and those evaluating their proposals will be addressing the same issues.

Fall 1996: UNIVERSITY SITE VISITS

This fall, representatives of NSERC Grant Selection Committees (GSCs) will visit 52 universities and affiliated institutions. These visits are intended to establish effective communications between NSERC and its GSCs and the research community; inform researchers of current NSERC policies and changes to programs; and provide an opportunity for the GSCs to get a feel for the research environment.

Teams comprise 5-8 members of GSCs from related disciplines and an NSERC staff person. GSCs have been grouped into four broad discipline groupings: Life Sciences; Engineering; Physical Sciences; and Computing and Information Science and Mathematics and Statistics. The teams visit the majority of universities in a three-year cycle. Universities scheduled for a site visit this fall are identified in the table.

Visits start with a half-hour session during which interested researchers from all disciplines are invited to comment and ask questions on a few pre-selected topics (e.g. fostering collaboration and interdisciplinary research, assessing contributions to the training of HQP, the reallocations exercise, statistics on the last competition, etc.). This session is followed by a half-hour presentation geared primarily to new faculty members on the "peer review process" and "how to prepare an application."

Following these sessions, the visiting team splits up to permit members to meet with interested individuals or small groups. Applicants should judge whether they would benefit. The visitors are interested in an overview of research interests and environment and, of course, special circumstances or concerns that should be transmitted to the entire GSC. They cannot comment on upcoming proposals or on the specific assessment of an application. The team may also schedule meetings with department heads, graduate students and postdoctoral fellows, or visit laboratories.

If you wish to know the name of the coordinator at your university organizing thefall visit, or if you have any questions or comments regarding site visits, please contact:

Nancy Rock Portelance
Site Visit Coordinator
Telephone: (613) 995-5810
Facsimile: (613) 992-5337
E-mail: coord@NSERC.ca.

USING NSERC PROGRAMS FOR INTERNATIONAL COLLABORATION

NSERC programs provide considerable flexibility to grantees regarding the uses to which grant funds may be put. In addition, NSERC's Research Partnerships Program permits foreign partners to participate in the project. This article indicates how Canadian researchers can use NSERC grants and programming to collaborate with European partners in research and technological development (RTD) under the European Union's RTD Programs. However, the approaches outlined below could easily apply to many other types of international collaboration.

Canada and the European Union (EU) reached an agreement in 1995 that gives Canadian researchers the opportunity to join with at least two European partners in research projects and consortia. The Fourth Framework Program covers RTD in twenty specific areas; Canada's agreement with the European Union permits us to participate in research in nine of these areas. The Agreement covers the shared use of facilities, exchange visits by researchers, and information exchange and related activities. It is important to remember that eligibility to participate does not mean that Canadians can receive European Union funds; Canadian participants must secure their own funding. The advantages to Canada are the leverage of funding, strengthening of Canadian research through participation in leading-edge international research projects, involvement in the development of technologies that conform to the EU's technical standards, and access to intellectual property generated in the course of the research. The Agreement contains an annex on the management, allocation, and exercise of intellectual property rights, thus simplifying their management.

Canadians can use NSERC's programs to participate in Fourth

Framework projects as follows:

1. Researchers holding Research Grants may use their grant to support travel related to the research, and to bring visiting researchers to Canada for a period of up to three months. Therefore there is no obstacle to holders of Research Grants using these funds to support their participation in a Fourth Framework application, provided it is related to their NSERC-funded research program.

2. The Research Partnerships Program (RPP) requires the participation of partners from outside the academic sector; these can include government, industrial or foreign partners. Partners must make a real contribution to the project, and there must be a receptor capacity in Canada for the results of the research. Membership in a Fourth Framework consortium would be a legitimate type of partnership, since European members of the consortium would be actively involved in the research. The application would be reviewed just like any other RPP application; however, if successful, disbursement of the funds would be conditional on the success of the Fourth Framework application.

For additional information on participating in European Union RTD programs, contact:

Dr. Bill Coderre
The Mission of Canada to the European Union
Avenue de Tervuren 2
1040 Brussels, Belgium
Telephone: (011-32-2) 741-0686
Facsimile: (011-32-2) 741-0269,

or the Department of Foreign Affairs and International Trade (Canada) by phone at (613) 996-3298.

Information on the EU's R&D programs can also be found at a number of Web sites; two of these are http://www.cordis.lu/, and http://europa.eu.int/.

NSERC AWARDS CEREMONY

During a ceremony in Ottawa on June 12, the winners of the 1996 Canada Gold Medal for Science and Engineering, E.W.R. Steacie Memorial Fellowships, and NSERC Doctoral Prizes were presented with their awards. Representatives from the government, academia, and the business community attended the event.

Canada Gold Medal Recipient: Stephen Hanessian, Chemistry, University of Montreal.

E.W.R. Steacie Fellows: Jed Harrison, Chemistry, University of Alberta; Catherine Kallin, Physics, McMaster University; Ming Li, Computer Science, University of Waterloo; and Demetri Terzopoulos, Computer Science, University of Toronto.

Doctoral Prize Winners: André Berthiaume, Computer and Operations, University of Montreal; John Corrigan, Chemistry, University of Waterloo; Alexander Wolfe, Physical Geography, Queen's University; and Chi Wu, Electrical and Computer Engineering, University of Toronto.

The 1997 Canada Gold Medal for Science and Engineering: A CALL FOR NOMINATIONS

NSERC is seeking nominations for next year's Gold Medal. Do you know someone with the appropriate qualifications? To find out how to nominate him or her, read on.

Who can be nominated?

Persons from any sector -- academic, business and industry, or government (excluding current NSERC Council Members) -- who have made outstanding and sustained contributions to Canadian research in the natural sciences and engineering.

What type of achievements are we looking for?

Achievements of exceptional importance and impact that lead to the enhancement of the research enterprise in Canada. For example,

- contributions to knowledge;
- application(s) of existing knowledge to the novel solution of practical problems;
- promotion or management of research activity;
- leadership in the transfer of knowledge.

How do you nominate a person?

Just send us

- an up-to-date curriculum vitae for the nominee;
- a comprehensive summary (up to 4 pages) of the nature of the achievement, the extent of its significance, benefit and impact, and the nominee's role in bringing about the achievement;
- the names and addresses (including e-mail) of 5 to 7 individuals from Canada or abroad who could assess the nominee's suitability for the award. Include a one-paragraph biography for each and a rationale for their selection as a referee.

The deadline for nominations is October 1, 1996.

More details on the nomination procedures are available in the Gold Medal pamphlet. For a copy, contact:
NSERC
350 Albert Street
Ottawa, Ontario K1A 1H5
Telephone: (613) 996-6266

1997 Competition: CHANGES TO NSERC PGS AND PDF PROGRAMS

NSERC has made a number of changes to its postgraduate scholarship (PGS) and postdoctoral fellowship (PDF) programs that will affect the 1997 competition for these awards. The changes will be reflected in the 1996 Scholarships and Fellowships Guide, which will be available in late August. In the meantime, further details can be obtained from Deans of Graduate Studies, University Scholarships Liaison Officers, and NSERC's Web site (http://www.nserc.ca/news1.htm). Some of the major changes are summarized below.

Applicant Eligibility

Students seeking support for NSERC scholarships for their first and second year of graduate study (PGS A) are now eligible to apply if they are in the last year of their undergraduate degree program, in a qualifying year of graduate studies, or in the first year of their graduate program as of the application deadline date. The maximum support offered will be for 24 months, except that for master's students this support will be reduced by the number of months the student has already spent in the master's program. Doctoral scholarships (PGS B) are also available for support in the third, fourth or fifth year of graduate study.

Applicants currently in university must be in their second or third year of graduate studies at the time of application and must have already completed no less than the full-time equivalent of 13 months of graduate study. Individuals not attending university must similarly have completed no less than 13 and no more than 36 months of graduate study to be eligible to apply.

Expanded Selection Criteria

The selection criteria for the PGS and PDF awards have been expanded. More emphasis will be placed on the candidate's potential to conduct research successfully. Contributions to R&D, relevant work experience, academic training, the significance and merit of the proposed research, and the candidate's suitability for research will be used to evaluate the candidate's research potential. In addition, consideration will be given to the candidate's communication skills and interpersonal and leadership abilities.

Detailed information on how the university and NSERC selection committees will assess candidates on the above criteria will be sent to Deans of Graduate Studies in early September.

New Application Form

The application forms for the various scholarship and fellowship programs are being revised and consolidated this year. The new form will be available in August.

Application Quotas

While the number of PDF applications will not be restricted, the expanded application window and eligibility criteria for PGS awards mean that NSERC will have to limit the number of applications that each university can submit in a given competition.

Each university will be advised of its quota in early September.

Stipend Levels

Effective April 1, 1997, PGS and PDF holders who take up their award at an institution other than the one at which they were located at the time of application will no longer be permitted to request a travel allowance.

In order to partially compensate those scholars and postdoctoral fellows who were the major requesters of these allowances, the value of the PGS A stipend will be increased by $100 to $15,700 per annum for both new and continuing awards, and the stipend for NSERC PDFs will be increased by $1,000 to $30,000 per annum. These increases will be effective April 1, 1997. The PGS B stipend, however, will remain at $17,400 per annum, since fewer holders of those awards travel to a new location.

Duration of PDF

All PDF awards, regardless of the location of tenure, will be 24 months in duration.

Candidates wishing to remain at the university from which they received their doctoral degree will still be required to submit convincing justification for wanting to remain there and a letter from the proposed supervisor and department head supporting their request. Those who for scientific or personal reasons must hold their fellowship at the same university should whenever possible try to broaden their experience by working in a different laboratory or department with a different supervisor.

Further Details

Staff of the Scholarships and Fellowships Division are planning a series of regional meetings for Deans of Graduate Studies and university Scholarships Liaison Officers in September to explain the changes.

INDUSTRIAL POSTGRADUATE SCHOLARSHIPS PROGRAM RENEWED

At its January 1996 meeting, Council approved the continuation of the Industrial Postgraduate Scholarships Program for another two years, beginning September 1.

This program provides students with industrial experience during their postgraduate training by allowing them to undertake thesis research in an area of interest to an industrial sponsor. Funding for each scholarship comes from NSERC and the company. NSERC will contribute a stipend of $12,500 per year for two years, while the sponsoring company will make a minimum cash contribution of $5,000 per year for two years.

The biggest change in the program is broadened eligibility for students with respect to time already spent in graduate studies.

Two types of award are available:

- a scholarship to provide 24 months of support towards a doctoral or a master's degree during the first three years of postgraduate study; and
- a scholarship to provide 24 months of support towards a doctoral degree during the third, fourth and fifth years of postgraduate study.

Students who have not started graduate studies or are in their first year of graduate studies may be nominated for the first type of award. To be eligible for the second type, students should be near the end of their second or in their third year of graduate studies.

Beginning on September 1, there will be 304 scholarships available, which must be taken up by August 31, 1998. NSERC has advised participating universities of their allocation of new awards. In addition, NSERC has retained a number of awards in reserve, which will be made available on a first-come, first-served basis to universities that have used up their quota. Universities that did not participate in the current phase of the program, but would like to participate during the new one should contact NSERC.

Nominations for the remaining awards in the current phase of the program are being accepted until August 31, 1996. As of May 1, NSERC had awarded 200 scholarships, out of a possible 304, from 248 nominations submitted. Any unused quota allocated to universities cannot be carried over beyond September 1, 1996.

For further information on the Industrial Postgraduate Scholarships program, contact:

Mario Lamarca
Telephone: (613) 996-3769
E-mail: mvl@nserc.ca.

Information on the program is also available on NSERC's Web site at http://www.nserc.ca.

STUDENTS WANTED

It's important for today's students to develop hands-on industrial

work experience. NSERC's Undergraduate Student Research Awards in Industry provide a great opportunity for co-op and summer students to do just that. They get the chance to gain research experience in an area relevant to their studies (which definitely beats flipping burgers!) while at the same time earning the money they need to continue their studies the following year. And they get to know the company and enhance their future career prospects -- sponsoring companies often use the program to identify potential future employees. In many cases, this industrial experience will whet the students' appetite for research and encourage them to continue on to graduate studies.

Applying is easy. Students can visit NSERC's Web site for a description of the program (http://www.nserc.ca/programs/usrainen.htm), then obtain a copy of the application material (including lists of eligible companies) from their department head.

Scholarships and Fellowships: RESULTS OF THE 1996 COMPETITION

NSERC's three scholarships and fellowships selection committees met during February to review 2,430 postgraduate scholarship and 812 postdoctoral fellowship applications. The number of PDF applications decreased slightly and there were approximately 16% fewer PGS applications in the 1996 competition than in 1995. This, combined with the availability of 125 more PGS awards, resulted in an increased success rate of 14% compared with the previous two years.

The distribution of available PGS awards among the three major discipline areas was again set by an allocation formula that provides for moderate steering towards the Engineering and Computer Sciences disciplines.

PGS and PDF 1996 Competition Results

Discipline Committee	Award Type	No. of Applications	No. of Awards	Success Rate (%)
Engineering/ Computer Science	PGS	874	591	67.6
	PDF	155	44	28.4
Life Sciences/	PGS	959	491	51.2

Psychology	PDF	334	77	23.1
Mathematical/	PGS	597	368	61.6
Physical Sciences	PDF	323	79	24.5
Total	PGS	2,430	1,450	59.7
	PDF	812	200	24.6

POSTGRADUATE SURVEY RESULTS

Over the past two summers, NSERC has conducted surveys of former postgraduate scholarship winners. The career status of former scholars and the importance that they attach to NSERC funding are important indicators of the value of our programs. Those surveyed included first-year Postgraduate Scholarship winners in 1985 and 1986, all 1967 Science and Engineering Scholarship winners in 1985, and new 1967 Science and Engineering Scholarship winners in 1986. In all, questionnaires were sent to 954 students. A total of 513 responses were received, for a response rate of 53.7%. The major findings of the surveys can be summarized as follows:

- The unemployment rate for respondents is very low, estimated to be below 3%.
- A high percentage (65.5%) of respondents are active in a research and development capacity, using their training for one of the primary purposes of the scholarship programs.
- 73.1% of respondents feel that their graduate training was "critical" to their careers.
- 98 respondents (19% of the total) were living outside the country at the time of the survey. More than half of these respondents intend to return to Canada.
- 96.1% of the respondents completed the degree (master's or doctorate) for which they received NSERC funding.
- 89% of the respondents said that NSERC funding was at least moderately important to their undertaking or continuing with their studies.
- The respondents' average completion times (1986 respondents) for bachelor's, master's and doctoral degrees were 3.72, 2.32 and 4.36 years, respectively. The average completion times for master's and doctoral degrees reported in this survey are similar to times reported by the Canadian Association of Graduate Schools for a much larger population.
- 73% of the 1967 Science and Engineering scholarship winners went on to complete their doctorate, an important objective of the program.
- Just under half (43%) of the respondents wrote remarks in the Comments section of the questionnaire. Most of the remarks

were "positive" -- expressing gratitude for having had the scholarship, and otherwise complimentary towards NSERC.

A copy of the Postgraduate Surveys Report can be obtained from NSERC's Distribution Centre. The executive summary is available

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RESEARCH UPDATE

Linking rural areas to the Information Highway

Distance education and telemedicine telecommunications technology will receive a $1.8 million boost from a new NSERC chair at Memorial University of Newfoundland. A joint initiative with the university, NewTel Communications and Nortel, the chair program will help lay the groundwork for the development of high-performance, cost-effective and human friendly multimedia communications that can expand communication capabilities into homes, businesses and institutions.

Attending the chair launch on behalf of NSERC, Leo Derikx, Director General of the Research Partnerships Program, said that NSERC is strongly convinced of the merits of this initiative. "It addresses a typically Canadian problem -- that of modern communications with remote areas such as those found in Newfoundland and in northern Canada -- and offers outstanding potential to develop new technologies and skills."

The newly appointed chairholder, Dr. John Robertson, was formerly manager of Multimedia Conferencing in the Network Services Department of Bell-Northern Research Ltd. (BNR), one of Canada's largest communications research companies. He has won several awards including two BNR Awards for Excellence for the development of a multimedia terminal, and for exceptional contributions to Nortel (Northern Telecom) and Bell Canada projects.

Harnessing laser power

Cooperative efforts between NSERC and international technology company Lumonics have helped ensure that one of Canada's most important "natural" resources remains in Canada.

Dwayne Miller, a top researcher in laser technology, has returned to his native Canada after several years in the United States to join the University of Toronto to become the holder of the NSERC-Lumonics Chair in Quantum Optics. "The establishment of the NSERC-Lumonics Chair has allowed us to attract one of the best researchers in this field," said Peter Munsche, UofT assistant vice-president for research services and technology transfer. (While in the U.S., Dr. Miller was the recipient of an NSF Presidential Young Investigator Award, a Dreyfus Teacher-Scholar Fellowship and an Alfred P. Sloan Fellowship.)

According to Dr. Munsche, Dr. Miller and Lumonics are working in a

field that is vital to the development of Canadian industry. The chair research will combine the high power electro-optics developed by Dr. Miller's group with recent advances in diode laser pumping at Lumonics. The long-term objective is a new generation of compact, stable laser sources for potential application in semiconductor processing and medical procedures.

The chair will also have an educational outreach component in which high school and university undergraduate students will get hands-on experience with state-of-the-art laser instrumentation. Lumonics is a public company and a world leader in the development, design and manufacture of laser-based advanced manufacturing systems for the semiconductor, electronics, aerospace, automotive and packaging markets.

Correction

In our spring issue, in "Research Update," we indicated that the new Eaton Chair was the first initiative of its kind in Canada in the retail sector. Since then, we have learned of the Omer deSerres Chair of Commerce at Montreal's École des Hautes Études Commerciales. Sponsored by a well-known retailer and headed by Dr. Jacques Nantel, this dynamic program also focuses primarily on the sector. Chair activities include bringing together a forum of businessmen and businesswomen, most of them heads of retail companies, six times a year.